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Minerals with hydrogen bonds and the possibility of their practical importance

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Abstract

© SGEM2014. All rights reserved. The article briefly presents the facts detection of hydrogen bonds in minerals, showing the abundance and diversity of these links in different classes of minerals and examining the use of these minerals in various industries. Hydrogen bonds are widely distributed in nature, organic and inorganic compounds. Hydrogen bonds are marked in different classes minerals. The composition of minerals in the hydrogen form may include ammonium ion, hydroxyl ion and water. Minerals with hydrogen bonds are widespread in nature and may form an intermediate between inorganic and organic matter. The hydrogen bond is a bond that is formed between the hydrogen atom of one molecule and atom of the element (O, N, F) of another molecule. Hydrogen bonds are also formed in the compound molecule, which atoms are bonded inside strong covalent bond with other molecules of water [1]. The mechanism of the hydrogen bond is partially electrostatic nature, partly donoracceptor. The hydrogen bond is weaker than ionic or covalent bond but stronger than usual intermolecular interaction. According to its energy (3-8 kcal/mol), hydrogen bond occupies an intermediate position between the van der Waals interactions (shares kcal/mol) and typical chemical bonds (tens of kcal/mol) [3].

Keywords

Hydrogen bonds, Hydroxides, Minerals, Silicates, Zeolite